



>ENIGMA<

V9.80 User Guide

V9.80 User Guide – English

Advanced Lighting Systems (Scotland) Limited
Copyright 1999

Table of Contents

<u>Contacts</u>	1
<u>Overview</u>	2
<u>Objective</u>	2
<u>Scope</u>	2
<u>Device Types</u>	2
<u>Sub-Devices</u>	2
<u>Presets and Triggers</u>	3
<u>Banks</u>	3
<u>Columns</u>	4
<u>Desks</u>	4
<u>Enables</u>	5
<u>Master Sequences</u>	5
<u>Conclusion</u>	5
<u>Getting Started</u>	5
<u>Access Code</u>	5
<u>Operation</u>	6
<u>Introduction – Versions (current is V9.81 – Oct 21 1999)</u>	6
<u>Notational Conventions</u>	6
<u>Prompts</u>	6
<u>Messages</u>	6
<u>Dialogue Windows</u>	6
<u>Escape</u>	7
<u>Help</u>	7
<u>Saving to Disc</u>	7
<u>High Resolution (Dual) Screen mode</u>	7
<u>Versions</u>	7
<u>Access – Initialisation</u>	8
<u>Access Codes</u>	8
<u>Remote Graphics</u>	8
<u>ROBOT sub-device selection</u>	8
<u>ROBOT Lamp On/Off/Reset</u>	8
<u>Aligning ROBOT Mirror movement to Joystick</u>	9
<u>Preset Selection – Set/Clear – Sound-to-Light</u>	9
<u>Preset Selection</u>	9
<u>SET and CLEAR functions</u>	10
<u>SOUND-TO-LIGHT function (S-to-L)</u>	10
<u>Touch Panel</u>	10
<u>Previewing Presets – Using Triggers</u>	11
<u>Sync Trigger</u>	12
<u>Other Triggers</u>	13
<u>Banks – Columns – Desks</u>	13
<u>Storing a PRESET in a BANK</u>	13
<u>Viewing Banks</u>	14
<u>Loading BANKS into COLUMNS</u>	14
<u>Abbreviated Trigger Mode Display</u>	14
<u>Desks</u>	15
<u>Current Device – Manual Control – Master Status</u>	15
<u>Current Device/Sub-device selection for real-time control</u>	15
<u>Dimmer Manual Control</u>	15
<u>Sub-Device Sub-Level</u>	16
<u>Master Status</u>	17
<u>Setting Tap/BPM counter (see Preview: Sync Trigger)</u>	17
<u>Sequence Counter</u>	17
<u>Robot Basic Manual Control</u>	17
<u>Selection, Joystick, Shutter, Level and Iris</u>	17
<u>Robot Features – Effects Generator</u>	19
<u>Colours and Gobos</u>	19
<u>Other Features</u>	19

Table of Contents

<u>Effects Generator (FxGen) and Position Mode</u>	19
<u>SWITCHED specific facilities</u>	20
<u>DIMMING specific facilities</u>	22
<u>Programming</u>	22
<u>Robot Presets – Overlays – Colour/Gobo menus</u>	23
<u>Overlays – an overview</u>	23
<u>Normal Presets</u>	23
<u>ROBOT Overlay Presets</u>	23
<u>Robot status screen</u>	24
<u>Cross-fade times for ROBOTS</u>	24
<u>ROBOT Programmable Menus</u>	24
<u>Copying Presets</u>	25
<u>Step and Repeat</u>	25
<u>Master Sequences</u>	25
<u>Master Sequence Editing</u>	25
<u>Interaction with SEOs during replay</u>	26
<u>Master Sequence – Record/Replay – Memory</u>	26
<u>Master Sequence Recording</u>	26
<u>Master Sequence Replay</u>	27
<u>Memory Limitations</u>	27
<u>Backup – Changing Access – Utility Disc</u>	28
<u>Backing up onto the Reserve Boot disc</u>	28
<u>Backing up onto the Internal drive</u>	28
<u>Changing Access mode without re-booting</u>	28
<u>Restarting without switching off</u>	28
<u>Utility Disc</u>	29
<u>Advanced Use – Auto – Special Presets – MIDI/Analog Input</u>	29
<u>AUTO function</u>	29
<u>Special Modes</u>	29
<u>Special Presets (Clear/Set/S->L/Touch)</u>	29
<u>MIDI/Touch/Analog Interface</u>	30
<u>Checking MIDI>Selecting input</u>	30
<u>Advanced Tips – Sequences – Effect Editor – Warning</u>	31
<u>Sequence types</u>	31
<u>Effect Editor</u>	31
<u>Warning</u>	32

Contacts



Advanced Lighting Systems (Scotland) Limited
1–3 Hillside Street, Edinburgh EH7 5HD, UK
Tel: +44(0) 131 556 1771 Fax: +44(0) 131 557 1973
Sales E-mail: sales@advanced-lighting.com
Support E-mail: support@advanced-lighting.com
Web: www.advanced-lighting.com

Installer



Overview

This guide has been created to provide first-time users of the >ENIGMA< Micro 2 (and original >ENIGMA<) programmable lighting control unit with a greater understanding of the system design and in turn simplifying the programming and operation of the controller.

Objective

User guides of this nature are prone to one of two major failings: they either spend too much time on theory and leave the operator to work out how to use the system, or they go straight into the practical side without explaining the system to the operator.

This manual attempts to strike a balance between the two extremes. This Overview section covers the basic concept and make-up of the system and explains the terminology used. The Operation section follows, which lead you through the various processes in a 'hands on' type structure. This section is reproduced in the on-line HELP system, which will also cover any new features.

If you take the time to read through the Overview, you will find the actual programming, set up and operation of >ENIGMA< simple and straight-forward, whilst achieving a greater understanding of its capabilities.

Scope

It is based on the current version of the software and covers most of the features available. If you have an earlier version, some features may not be implemented – contact your installer for details of upgrading. If you require further information, you should contact Advanced Lighting Systems. There is a separate guide that covers installation and configuration.

Device Types

The structure of the system is such that any lighting effect under its control has to be classified in one of a range of device types. For certain types of device, specifically intelligent lighting, this is an operational necessity. For others such as those controlled by standard switching and dimming channels, it is more of an *aide-memoire* for the operator.

The categories or Devices are as follows:

- DIMMER – fittings that are controlled only by dimming channels e.g. Par Cans, Par 56s
- EFFECT – effects usually controlled by switching channels such as Strobes, Motors, Smoke machines, Hoists
- ZONE – for dimming and/or switching channels for lighting units such as Pinspots, Motorised Lamps, Scanners
- NEON – as the name suggests, is used for channels specifically controlling Neon
- ROBOT – intelligent lighting units e.g. fixtures from Clay Paky, High End and Martin
- VIDEO – graphics and message units such as Video Walls and moving message systems
- LASER – for Laser systems (Argon/Krypton) as well as Colour Boxes and Beam Actuators

Sub-Devices

For each DEVICE there can be up to nine sub-devices. A sub-device can be one lighting unit or a group of related lighting units/channels. There may be 1–144 channels in a sub-device. Some typical examples of sub-devices might be:

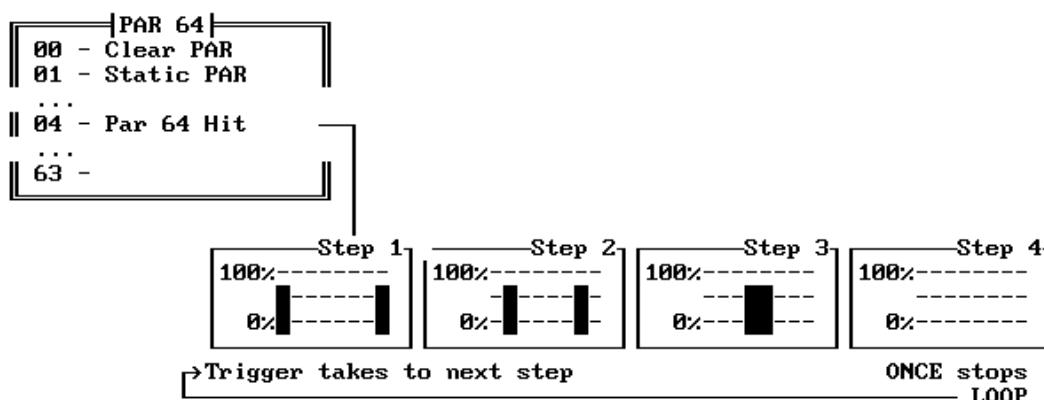
- A group of 16 channels for Pin-spots ----- ZONE 7
- A group of 40 channels for Par cans ----- DIMMER 4
- A group of 8 Golden Scans ----- ROBOT 1
- A Neon display comprising 96 channels – NEON 2

The Sub-Devices are given user friendly names when the system is configured and this can be altered using the Utility Disc to cater for any changes to the lighting environment. PRESETS or Programs are created for individual SUB-DEVICES.

Presets and Triggers

You can create between 32 and 256 PRESETS for each sub-device and store them in the controller's memory. A PRESET or program comprises 1 to 64 steps where each step represents an individual lighting scene. The transition from step to step can be triggered by a variety of methods such as time intervals, audio signals, synchronized clock, manual control and TAP BPM. Step and cross-fade times are variable from one 30th of a second to 8 seconds in increments of one 30th of a second and they can have different settings for each step or the same settings can be applied to all program steps.

Preset directory (as shown in Edit or Preview) with illustration of what a preset contains:

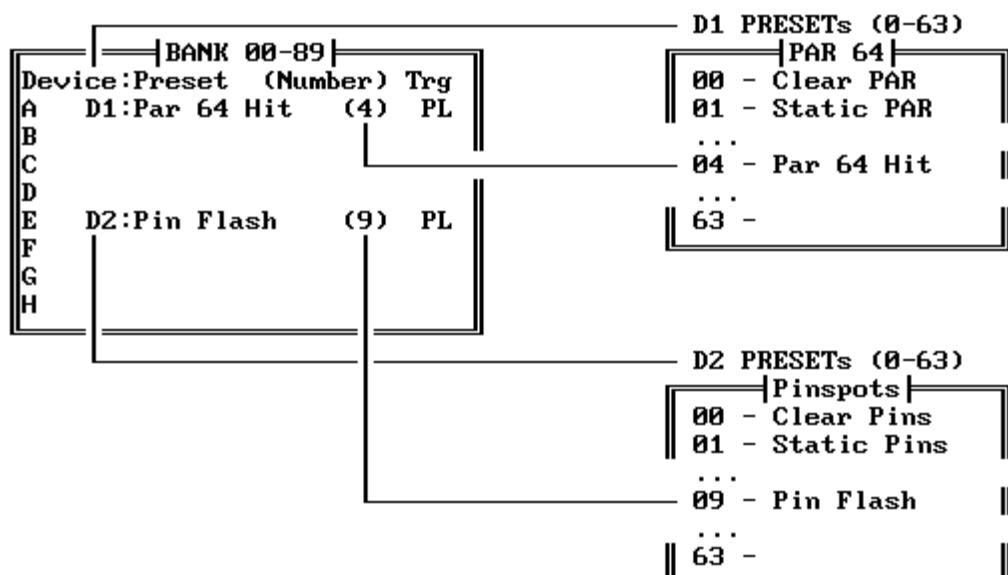


The default trigger mode (PRESET) is such that it continually loops round at the speed defined when it was programmed. However, there are other modes that can be applied to a Preset when it is stored, such as CLOCK (allowing the speed to be overridden), AUDIO (to the beat) and ONCE (so it does not loop).

Banks

Once a PRESET has been created or edited, it must be stored in a BANK before it can be accessed and run. Any of the triggers can be applied to the same PRESET and stored with it in the BANK. You may also set an overall level for dimming type sub-devices. The same PRESET can be stored in several locations with a different trigger or level applied in each case.

Bank display (simplified) showing references to presets in the directories:

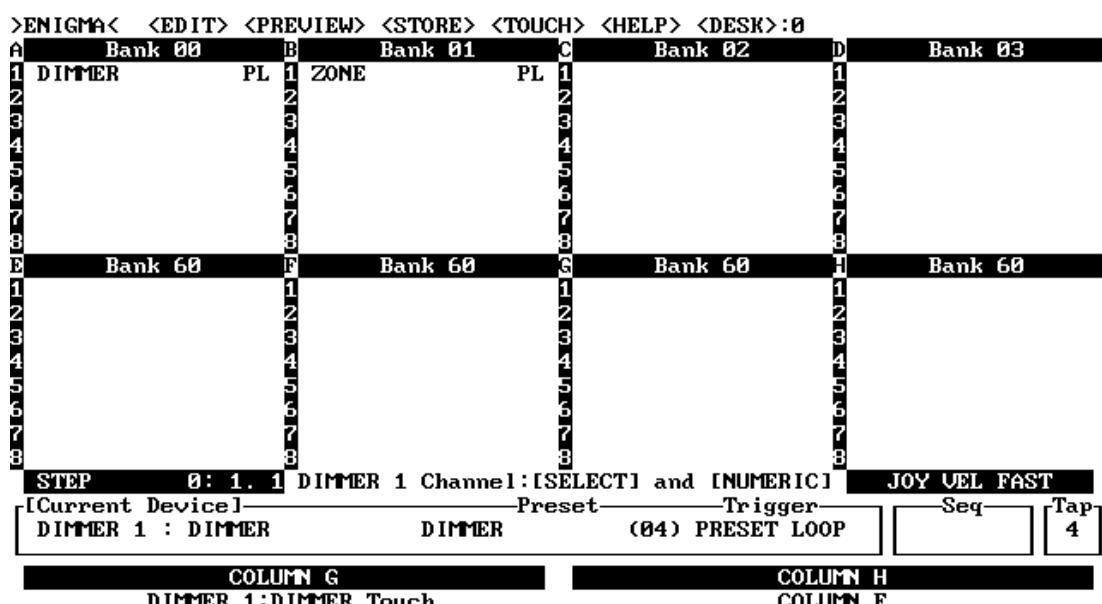


There are 200 BANKS, numbered 000 through 199. The BANKS can contain up to eight PRESETS from any combination of SUB-DEVICES but you would normally group the PRESETS for similar SUB-DEVICES in the same BANKs. This makes it easier to remember what is where and avoids problems with PRESETS controlling motors being inadvertently assigned to Touch Panel keys. These banks have an automatic title based on the combination of presets stored in them.

Columns

A BANK must be loaded into one of 8 available COLUMNS before the presets stored can be run. The columns labelled A through D represent the 4 X 8 matrix of keys, situated on the left side of the control panel, used to activate the presets. The top half of the display screen always shows which BANKS of presets are currently loaded into the four COLUMNS and the name of the preset assigned to each key. Pressing a column key will run the named preset as shown in the equivalent position on the display screen. It is therefore important when creating presets to give them appropriate names for ease of recognition by the operator.

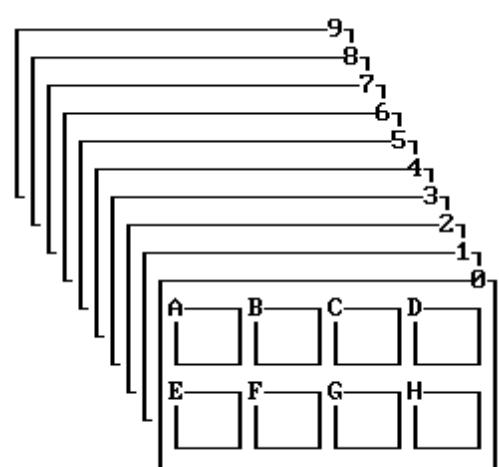
Desk display showing 8 Columns (A-H) with a combination of Banks:



The display screen also shows four additional COLUMNS, labelled E through H, directly below those mentioned above. The PRESETS in these COLUMNS are accessible from the 32 way Touch Panel.

Desks

The current combination of loaded columns, as displayed on the screen, can be saved together as a unit called a DESK configuration. There can be 20 such desks, numbered 0 through 19, and a change from one desk to another can be done by pressing just two keys: <DESK> and then the number in the section headed [NUMERIC]. This is an example of the fast and easy use of >ENIGMA<.



Enables

When a preset is run, it will automatically turn on the ENABLE key for the appropriate sub-device. The enable keys, as the name suggests, allow the required signals to be output from the Enigma to the lighting units under control. The keys themselves are illuminated when ON and they are switched between the OFF and ON states with each subsequent key press. An important point to note is that an active preset will remain active within the controller regardless of the state of its associated Enable key. The reason for this becomes clear in a forthcoming topic dealing with a special type of program known as a Master Sequence.

Master Sequences

Presets or programs can be created that are sequences of sub-device presets. These belong to a sub-device called 'Master' under the DEVICE category SEQ. Unlike normal sub-device presets, they can have more than 64 steps and each step can hold any combination of presets of different sub-devices allowing them to run together. Also, any combination of ENABLES can be turned ON/OFF thereby controlling the output of signals to the lighting effects for any already active presets. This explains the reason for allowing presets to remain active without regard to the state of its Enable. Master Sequences can also be recorded in step with an event time-code, internal clock or synchronized with an SMPTE time signal.

Conclusion

As well as letting you create this amazing variety of preset or programs to control such a vast array of lighting effects, >ENIGMA< also allows you to control a sub-device in real time irrespective of any presets that may be running for other sub-devices. All these basic facilities are covered in detail in the Operation section that follows.

Throughout this guide the terms PRESET and PROGRAM are used interchangeably and generally refer to a facility that allows a programmed sequence of lighting scenes to be activated from a single key.

Getting Started

If you have a Hard Disc, ensure no disc is inserted in the external floppy drive, otherwise ensure that the Floppy Disc labelled PRIMARY has been inserted into the external disc drive on the front of the processor. Switch on the power and wait for the system to boot up. This can sometimes take a few minutes. If it fails to come up, Switch off the power, WAIT 10 SECONDS and switch the power on again.

NOTE: Safety monitoring in the power supply will not allow the system to boot up if the power is applied too soon.

If the >ENIGMA< will not boot up using the normal PRIMARY (or Hard Disc), switch the power off, remove any floppy disc from the external drive, insert the disc labelled RESERVE and power on again. The >ENIGMA< will now try to boot up from this disc.

If the system still refuses to boot up, contact your installer immediately for technical assistance.

When the system has successfully booted up, all LEDs on the control panel will light up as part of a self-test. At the same time various messages will appear on the display screen indicating such things as the Robot type, the status of DMX outputs and basic configuration of channels. At the top of the screen there will be a message asking you to enter the Access Code.

Access Code

The access codes are made up of four digits and are entered using the keys under the heading [NUMERIC] – your installer will provide you with them but the default User code is 3954.

If you make a mistake, just press any key until the line clears itself and start again. However, if you continually key in an invalid access code, the system will ultimately hang-up and you will have to switch off and re-boot since the >ENIGMA< assumes that you are an unauthorised user trying to access the system. After you enter the correct access code, the normal operating screen is displayed and the controller is now ready for use.

Operation

Introduction – Versions (current is V9.81 – Oct 21 1999)

Notational Conventions

Throughout this guide, highlighted lines indicate control panel key sequences that the operator should press with square brackets indicating the group heading and angled brackets for the key e.g.

```
[DEVICE]<?> (press a key under the DEVICE heading, e.g. <DIMMER>)  
<PREVIEW> (press the key labelled PREVIEW)  
[SELECT]<A-P> (press a key in the range A - P in the SELECT section)
```

These are each on a separate line, unless there are no other options, in which case they are on the same line separated by a comma:

```
<SYSTEM>, <STORE>
```

Prompts

The top line shows the main keys that may be pressed as you go through the key sequence. If you start a key sequence (in other words >ENIGMA< is waiting for completion), after a couple of seconds a Hint window will appear at the bottom of the screen with further explanations.

Messages

If at any time you press a wrong key, >ENIGMA< will display

```
Illegal Keypress - select option on top line
```

If you pressed a valid key but not the one you meant to, you will have to press the <ESCAPE> key and start the operation again.

If the number or selection is inappropriate or too high, e.g. trying to select the 9th channel on a device which only has 8 you will see:

```
Unsuitable Option
```

Dialogue Windows

These are small windows displayed when you are asked for text or a number.

```
Enter Character..._ or Enter Numeric..._
```

Use <A> – <Z> (on Column keys, or QWERTY keys if present) and/or [NUMERIC] <0> – <9>. In these the <DELETE> key can be used to remove mistakes. When complete press <ENTER>. You can use the <SHIFT> key to change the case and select alternative symbols for punctuation (depends on keyboard type). If you use all lower case letters, they will be automatically capitalised (Like This) to make it easier to read.

Escape

You can press <ESCAPE> at any point during an operation to abandon the process. As you will see, use is made of this facility during certain operations explained in this text.

Help

There is an extensive help system built into >ENIGMA<, you may select it at any time:

```
<HELP> (for topic that relates to the current function)
<HELP> (again for index of topics)
```

You may then browse through this with the < and > keys and use <ESCAPE> to return to where you were.

Saving to Disc

The system auto-saves after 5 minutes if the keyboard is not used. This allows fast programming with a floppy, as it can all be saved to disc in one go after periods of programming. However, if you are working non-stop, you should periodically save changes to disc manually using:

```
<SYSTEM>, <STORE>
```

Note: this disables further auto-saves and you are reminded of this at switch on to allow choice of previous manual method. This then presents reminders every 10 minutes, which may be ignored if the editing is temporary or you wish to revert to the previously saved settings.

High Resolution (Dual) Screen mode

This displays both the desk and the preview display at once and shows the channel names (if configured using Utility) for switch/dimming sub-devices and an expanded Master Status display:

```
<SYSTEM>, [SELECT]<F/G> (Normal/High Resolution)
```

Versions

Hardware

If you have an original >ENIGMA< or MICRO keyboard (the ENABLE keys will be fully lit, as opposed to a small LED in the corner) then some of the key names are different:

- [ENCODER]<IRIS> is labelled [ENCODER]<MENU>
- [ENCODER]<ROBOT SHUT> is labelled [ENCODER]<ROBOT>
- [ENCODER]<ROBOT LEVEL> is labelled [ENCODER]<VIDEO>
- [MODIFY]<ZOOM/FOCUS> is labelled [MODIFY]<ZOOM>

>ENIGMA< users have an extra 32 keys to access Columns E–F and a separate QWERTY layout key area, instead of using the alphabetically labelled Column keys. Otherwise the software operation is the same, the difference is in processing capability and customising.

Original systems do not have Switched/Analog Inputs, though an add-on upgrade is available for most systems.

Software changes

If you have an earlier version of software the following features will not apply.

Since V9.59/9.62

- Effect Generator to automatically create circles (see [Robot Features](#))
- Step & Repeat to automatically create chases (see [Robot Presets](#))
- Improved AUTO mode (see [Advanced](#))
- Auto-save

Since V9.75

- Desks increased to 20 and Banks increased to 200 using [NUMERIC]<STEP> and the <=/> keys (see [Banks](#))
- Auto-save changed to 5 minutes or 10 minute reminder if it is disabled using <SYSTEM>, <STORE>
- MIDI Program commands altered to suit new desks (see [Advanced](#))
- Effect Generator stops when enable is off to stop mirror movement during blackout
- Effect Generator Number, Speed and Offset is now displayed (see [Robot Features: Effect Generator](#))
- Sync Trigger Multiplier/Offset (see [Preview: Sync Trigger](#))
- Turning off Exclusive Robot preset selects preset 0 like other devices, so it can close the shutter
- Columns are exclusive for Robot Overlays (see [Robot Presets](#))

Since V9.80

- Column Exclusives can be disabled using <TRG MENU>, <CLEAR>
- Colour xfade works correctly

Access – Initialisation

Access Codes

There are three access codes that define the degree of access allowed. The PROGRAMMER code allows operation of the controller and programming of the normal user Presets (above 16) as well as updates to DESK configurations 2 to 9. The USER code is the same but prohibits all saving to disc. The INSTALLER code allows operation of the controller and programming of all the Presets and changes to all the Desks (0–9). These restrictions are because some of the presets in the 0–15 range need special care when programming and should not be altered unless the operator fully understands >ENIGMA<. Furthermore some sub-devices may not allow any access if defined as 'Installer only', this is normally done with items like moving rigs where presets should be carefully programmed to work in a specific way.

Remote Graphics

If you have a second screen for Robot graphics, the network link must be allowed to connect and you should not enter the access code until it has booted up and displaying 'Waiting for data...'

ROBOT sub-device selection

In both the following functions, if you have more than one type of Robot sub-device, you should set the Current Device first:

[DEVICE]<ROBOT>, [NUMERIC]<1-9> (sub-device)

ROBOT Lamp On/Off/Reset

Some Intelligent lighting units must have the lamps turned on manually (in addition to switching their power on).

<SYSTEM>, [JOYSTICK]<ROBOT>

A window then offers several options. These will say 'Not Used' if the configured Robot type does not support the function (refer to the specific Robot type notes for details of implementation):

[NUMERIC]<1-3> (Lamp On, Lamp Off, Reset)
 [SELECT]<A-P> (repeating for each fixture)
 <ENTER> to end

Aligning ROBOT Mirror movement to Joystick

>ENIGMA< lets you synchronize the direction of mirror movement with the Joystick action for each individual channel or lighting unit. This enables you to move the beams in the same direction even if the units are mounted on opposite sides of the dance floor or stage for example. You do this using the Set Sense initialise option:

<SYSTEM>, [JOYSTICK]<ROBOT>, [NUMERIC]<4> (Set Sense)
 [SELECT]<A-P> (repeat for each fixture)

Move the Joystick in one direction and check how the light moves. If it does not move in the direction you want, press the forward arrow key

=>

once and move the joystick in the same direction as before. Repeat this process up to 4 times till you are satisfied then select the next channel for adjustment. Once you have all channels set as required press

<ENTER> (to end)

Preset Selection – Set/Clear – Sound-to-Light

Preset Selection

Any PRESET on the top half of the display screen can be run by pressing the associated COLUMN preset key (A1–D8). Pressing another preset key for the same sub-device will cause the program that was running to be replaced by the one selected. Pressing the same key again switches off the preset (actually it selects Preset 0). This also applies to EXCLUSIVE Robot presets.

For Robot overlays with the ADD trigger, pressing the same key REMOVES that overlay (it does not select Preset 0), allowing them to be added and subtracted. This gives enormous flexibility but note that unless there is an exclusive preset for the parameter (e.g. colour) to return to, it will appear to 'latch', so this needs some care to get the expected result (see [Robot Presets](#)).

The preset name is highlighted and correctly shows which have been cancelled by exclusive operation. However it only shows manually selected presets and there may be others running that were selected within another Desk, so it is not a definitive status display – use Master Status to show what is actually running (see [Devices](#)).

When a PRESET is activated its associated ENABLE key will be illuminated. Pressing this key is the quickest way to turn OFF the lighting effect being controlled by the PRESET.

If the preset that you wish to run is not currently shown on the screen, you have two methods by which you can access it. If it has already been stored in a BANK you can load that BANK into one of the four COLUMNS (see [Banks](#)), replacing what is currently there, and then press the appropriate COLUMN key. Failing that, you can run it using the Preview facility and also have the option of modifying the triggers and step times and saving the result in a BANK for future access (see [Preview](#)).

SET and CLEAR functions

The SET function uses Preset 1 to turn ON all the channels for a sub-device, while the CLEAR function uses Preset 0 to turn OFF all the channels for a sub-device.

```
<SET> or <CLEAR>
[DEVICE]<?> (e.g. <NEON>)
[NUMBERIC]<1-9> (sub-device)
```

These are useful for quick control of sub-devices and for testing, as it doesn't matter what you have in the current Desk.

SOUND-TO-LIGHT function (S-to-L)

This normally works in conjunction with Preset number 2 for switched and dimming sub-devices. The sound is split into 8 separate frequency bands that are used to control the sub-device channels as selected by the first 8 Steps of this preset. There are four types of effect:

1. SWITCH – turns the lamps on whenever the sound level exceeds a threshold, giving a fast, high contrast effect
2. PULSE – gives a pulsed flash whenever there is a transient, irrespective of the level, giving a very lively effect in all frequency bands
3. FAST – directly modulates the light levels, giving a lower contrast than the first two, but it is still fast
4. SLOW – as above except that it is filtered, giving a gentler mood effect, with lower contrast and overall level

The sound-to-light function is applied to the current sub-device (see [Devices](#)) and then press:

```
<S-to-L>, [NUMBERIC]<1-4> (effect type)
```

The sound to light effect is now applied to the current sub-device. After being selected, you may then STORE it in a bank like any other preset. It is exclusive so it stops any preset, and pressing any preset turns it off. As before it uses preset 2 by default to define what each band does. The effect type (Switch, Pulse, Fast, Slow) is shown in the column as 'L1' to 'L4', the 'L' indicating it is S-to-L as opposed to 'PL' for Preset Loop etc.

After pressing <S-to-L>, there is an option (press <SET>) that takes the preset number in the Current Device and uses that to define the S-to-L action. This allows a preset other than number 2 to define what each band does, so in one the bass could modulate the Red, while in another it could modulate the Yellow.

Touch Panel

Touch panel sections can be assigned to either a sub-device or a COLUMN of Presets. When assigned to a sub-device, the 8 keys in the section work in conjunction with the 8 Steps defined for PRESET number 3 or 4. Pressing Touch key 1 will activate the channels selected in Step 1, key 2 the channels in Step 2 and so on. If a PRESET is running for the sub-device, any touch key actions will overlay the actions being performed by the PRESET itself.

When a touch section is assigned to a COLUMN, the 8 touch keys will activate the 8 PRESETS currently loaded in that COLUMN. For example, if a touch section is assigned to COLUMN E, touching key 4 will activate the PRESET in position 4 of COLUMN E. This is much the same as pressing the Column key, except that as soon as you remove your finger, the PRESET will revert to its previous state (a momentary swap). This is either 'off', or to the preset previously selected by the Column keys.

The available assignments for the touch panel sections are configured using the Utility disc. They are listed when you press the TOUCH assign key. The Utility disc can also be used to set the external touch panels to Latch mode.

```
[ASSIGN]<TOUCH> left or right
```

A window listing the available options for the Upper and Lower sections is displayed (to switch off the touch panel, select option 0):

[NUMERIC]<0-8>

The touch keys will now be enabled and the selection will be shown at the bottom of the screen.

Internal Touch Panel

This defaults to Momentary Swap, so releasing the key will swap back to whatever was running before. If a non-robot preset is selected, it will turn off the highlights on the affected sub-device, indicating that the touch preset has taken control. Releasing the Touch key will cause the original preset to be restored along with its highlight (for technical reasons this will only be done once ALL Touch keys are released).

If a robot preset is selected, it will leave the original highlights as they are technically still running as overlays, even if the Touch one is exclusive. Releasing the touch key does not actually swap back to the original, it just allows it to be 'revealed'.

External Touch Panels

The 2 Switched inputs on Micro 2 are mapped as momentary swap to A–D and E–H respectively. It is intended that if both are used, the internal touch panel can have its Momentary Swap mode switched off or used for sub-device scene access. In this way the main panel keys are all Toggle, the external ones are all Momentary Swap.

Touch Panel modes

If the touch panel is set to COLUMN mode, the MIDI or Analog input will trigger the preset when the level exceeds 5% and then control its overall level. If it is set to Device overlay mode (e.g. DIMMER 1) it will control the level of the first 8 steps in the touch preset, providing a scene fading facility. Note that the MIDI input to Columns A–D simply act as triggers, so any velocity selects the preset at 100% level.

Analog Input

This is enabled with <SYSTEM>, <3> after which the 16, 0–10V inputs will control the lower touch panel in the same fashion as the MIDI notes or fader input. This input is also automatically enabled to control the Robot parameters and Dimming channels during Edit. For Robots, the order of the parameters from left to right is: Robot Menu parameters 1–9; Colour; Gobo; Position Mode; Focus; Level; Shutter; Iris.

In all cases the adjustment is relative so it will start controlling it from wherever the fader happens to be and the position will not reflect the actual current setting. This means that it may not be able to control it over the full range, so in this case you just wipe the fader from top to bottom and it will lock into the correct value.

Latched mode

This causes the touch panel to operate in the same fashion as the Column keys, so the presets latch instead of being momentary. The latch mode can be used during SEQ Record/Edit.

<DESK>, <SET> (momentary/swap presets) or <CLEAR> (latched presets)

Previewing Presets – Using Triggers

The preview facility will show you a PRESET running in simulation mode on the display screen and, depending on the sub-device, will output the signal to the lights. You can change the step and cross-fade times as well as the trigger type and this will have an immediate effect. The applicable Enable key is automatically turned on and the selected PRESET will become the Current Device. You can then store the PRESET in one of the BANKS (see the following section).

Preview is also a useful way of listing the names of the PRESETS that have been created for a sub-device.

<PREVIEW>

A window is displayed listing the PRESETS for the current sub-device. Only the first 16 are shown on the screen but you can page forward through the complete list of 32–256 presets by pressing the forward arrow key in the NUMERIC section:

=>

If the current sub-device is not the one you wish to preview for, select the required device:

[DEVICE]<?> (e.g. <DIMMER> or <NEON>)

A window is displayed listing the available sub-devices for the that device, to select it:

[NUMERIC]<1-9>

This now becomes the current sub-device and the window listing the associated PRESETS is displayed. If all that you wanted to do was view the list of available presets then you should press the <ESCAPE> key to terminate the Preview function at this point.

To select a PRESET for previewing and running, key the Preset number – a leading zero is not required for 0–9:

[NUMERIC] (0-31, 63, 127 or 254) followed by <ENTER> when complete

A simulation of the preset running will now appear on the display screen. You can modify the various run time controls repeatedly until you are satisfied with the result. The things you can change include step/crossfade times, triggers and trigger modes.

[TRIGGER]<CLOCK>

The ENCODER will now be enabled for STEP time modification and the encoder display box at the bottom left of the display screen will show the STEP time as set when the preset was edited.

[ENCODER]<X-FADE> or <STEP>

Use the ENCODER to adjust the time from one 30th of a second up to 8 seconds. The encoder display will indicate the time adjustments.

Sync Trigger

This uses the Tap/BPM clock or Audio, which is very useful to synchronise multiple Devices, as they all share this same trigger (see [Devices: Setting Tap](#)).

Pressing the <SYNC> key enables the encoder to control a combined setting consisting of a Multiplier and an Offset. This is displayed as a fraction and a value, e.g. "2/1 -3" (means trigger every 2nd beat, offset by -3 frames). *Note:* when making manual adjustments to a Sync overlay, you should immediately save it in a Bank and if you wish to see its effect with another overlay, reselect it as a preset from the Bank. If you just leave it and select another overlay for adjustment, the old one will simply stop due to the manual adjustment.

- Multiplier – the triggers can be selected to fire from 8 times a beat (1/8) to every 8th beat (8/1). This allows the triggering to be synchronised to the music but at a rate that suits the effect, e.g. a slow effect can be triggered every 4 beats while a strobe can be pulsed every 1/4 beat (on-off-on-off) to give a double time chase effect.
- Offset – the trigger time can be advanced by up to 7 frames (each frame = 1/30th sec) to allow slow effects to be pre-triggered so they are exactly synchronised with the music. 0 means no pre-trigger so it is simply selected as normal on the beat, which is suitable for fast effects such as Strobes or Neon.
- Xfade – The higher settings of the encoder repeat the range but prefixed with an X (meaning Xfade), which means the Xfade is automatically set to match the tempo. This allows the same presets to work with a wide variety of music tempos. The normal setting uses the Preset Xfade where the rate is fixed. *Note:* The SYNC xfade only works when

the preset is a) stored in a bank and b) selected *after* the BPM is set. This is fine for normal use but means that manual adjustments do not work.

Other Triggers

There are several other trigger types in the [TRIGGER] section (see [Banks: Trigger Mode](#)):

- <AUDIO> steps the preset on the bass band, though you can also select other bands (using [NUMERIC]) for more complex effects
- <MANUAL> steps the preset when the <TAP> key is hit so you can set the pace yourself. This is useful for a live pre-programmed show, allowing you to step through on each cue

You may also select a trigger sub-mode:

1. Off (STATIC) – stops running at the current step. To start again, choose another mode
2. Add – see [Robot Presets](#)
3. Exclusive – see [Robot Presets](#)
4. Loop – preset loops round through the steps continually (default mode)
5. Stop (and freeze) – runs through the steps once only and stops with the last step remaining active
6. Lock – same as mode 3 but cannot be interrupted or cleared while running. It will always run to completion. Normally used for Power up sequences or Motors. Not implemented for Robots and Sequences
7. Once (and Clear) – runs through the steps once only and clears at the end. Not implemented for Robots, for Sequences this selects SMPTE
8. Bounce – runs forward and backward (not Robots or SEQ)
9. Reverse – as Loop but runs backward (not Robots or SEQ)

```
[TRIGGER]<MENU>
[numeric]<1-9> (trigger sub-mode)
```

The selected trigger and mode are indicated in the trigger area of the Current device section on the display screen. If you select any of the ONCE modes during Preview, the preset simulation will run through once and stop as you would expect. If you wish to run it again, select another trigger and mode if required then press the <PREVIEW> key to re-start the simulation.

```
<ENTER> to end
```

The Preview function will terminate. You now have the option of storing the PRESET into a BANK together with the LAST trigger and mode selected within Preview. The mode is indicated when stored in a Bank and in an abbreviated form in the Desks (see [Banks: Trigger Mode](#)).

Banks – Columns – Desks

Storing a PRESET in a BANK

The STORE function always acts upon the Current Device, sub-device and PRESET number as indicated in the red box near the bottom of the display screen. Since the Preview function will have updated this, you will be storing the preset just previewed, which is normally what is wanted.

```
<STORE>
```

A window is displayed showing the last BANK that was referred to. You can choose other Banks by keying the 2 digit number, [NUMERIC]<STEP> to add 100 for Banks 100–199 or the arrows to browse. You may also clear a bank by pressing <CLEAR> which gives a clean start and is important if you want to take advantage of the auto–title facility. This labels the top of the Bank as follows: if they are all the same sub–device, it will show the full name, e.g. 'PAR Cans'; if they are the same Device grouping, it will show this, e.g. 'DIMMER'; otherwise it will show 'Mixed Bank'. So by being careful with how you create Banks, you can make the title clearly indicate what the Bank contains. When you have the correct BANK displayed, select the position in the BANK to store the PRESET.

```
( [NUMERIC]<STEP> to add 100)

[NUMERIC]<0-9> twice (for Bank ?00 to ?99) or <=/> to browse

[SELECT]<A-H> for the target position in the Bank window
```

The preset will be stored in the position in the selected BANK. If that BANK is currently loaded into one of the Columns then the display screen will be updated showing the PRESET name.

Viewing Banks

You can quickly look through the BANKS to check for the existence of a preset by using the STORE function as above, using the [NUMERIC] keys to browse, but then just press <ESCAPE> instead of a [SELECT] key.

Loading BANKS into COLUMNS

The next stage is to put the Bank into a Column, so presets can be selected with a direct key press:

```
<COLUMN>, [SELECT]<A-H> (for the target Column)

([NUMERIC]<STEP> to add 100) [NUMERIC]<0-9> twice (for Bank ?00 to ?99)
```

The display screen will now show the BANK of presets in the chosen COLUMN position and you can run the presets in that BANK immediately using the appropriate Column keys.

NOTE: Loading a BANK into a COLUMN does not automatically make that BANK part of the current DESK. The current DESK must be stored to incorporate the Bank permanently in that DESK number (see Desks, below).

The COLUMN will show a prefix (e.g. "IB:") if the name has a space as its first character. The end characters are an abbreviation of the Trigger mode as explained below.

Abbreviated Trigger Mode Display

If the sub–level is adjusted from the default 100%, the percentage will overwrite the last 4 characters of the preset name. This is followed by a 2 character trigger mode:

First character options (the Clock characters approximate to the Step time):

```
[P]=Preset [-|=1/4|1/2|1|2|4|8]=Clock [A]=Audio [S]=Sync [O]=Off

[L1] to [L4]=Sound-to-Light Mode (both characters)
```

Second character options:

```
[L]=Loop [O]=Once and Clear [B]=Bounce [R]=Reverse [S]=Stop
```

Finally, if it is an ADD preset, it will have a + sign at the end.

Desks

To create or modify a DESK, load the eight Columns with the combination of BANK numbers you desire. This can be done by first loading an existing DESK you wish to modify, and then loading the COLUMNS that you wish to change, or by just loading the COLUMNS in turn with the required Banks.

Storing a DESK

The current combination of BANKs as loaded into the eight COLUMNS can be stored as a DESK configuration:

```
<STORE>, <DESK>, ([NUMERIC]<STEP> to add 10) [NUMERIC]<0-9>
```

This then becomes the current Desk.

Loading a DESK

```
<DESK>, ([NUMERIC]<STEP> to add 10) [NUMERIC]<0-9> or <=/=> to browse
```

The COLUMNS will now be loaded with the Banks stored in the chosen DESK and the display screen will show the numbers of the BANKS and the names of the PRESETS in the BANKs. These PRESETS can now be run immediately using the Column keys. When using the browse option, the Desks are active, so you can make selections, you then press <ENTER> to retain the current one or <ESCAPE> to revert to the original Desk.

NOTE: Loading a new DESK or a new BANK into a COLUMN will not affect any PRESETS that are currently running.

Current Device – Manual Control – Master Status

Current Device/Sub-device selection for real-time control

Any PRESET activated for the current sub-device can be monitored and controlled in much the same way as Preview, but in real time. You can change the STEP and X-FADE times while the PRESET is running – with immediate effect. You can also change the trigger and trigger modes while the PRESET runs – again with immediate effect.

Changing the current device and sub-device is a simple operation:

```
[DEVICE]<?> (e.g. <DIMMER>)
```

```
[NUMERIC]<1-9> (sub-device)
```

The current device display on the screen will be updated to show the DEVICE name, Sub-device name and PRESET number of the last PRESET selected. You can activate a preset from the Column keys in the normal manner and the PRESET number with associated trigger details will be shown in the current device display. The Desk banks shows these trigger details in abbreviated form (see [Banks: Trigger Mode](#)). The screen will display a mimic of the sub-device, but pressing <ESCAPE> or any other key that uses the Desk will clear this, unless it is in dual screen mode.

The <STEP>, <X-FADE>, [TRIGGER] and <MENU> facilities are used in exactly the same way as with [Preview](#).

NOTE: If you select one of the trigger modes with the ONCE feature, the preset will stop at the last step. Pressing the PRESET Column key again will re-start the program.

Dimmer Manual Control

Dimming channels for a sub-device can be controlled manually in real time using the LEVEL function. Manual actions will override those that are being carried out by any PRESET that is running for the sub-device that you have in manual control

```
<LEVEL>
```

A window is displayed showing the Sub-Device list for the current DEVICE. Sub-devices with dimming channels are normally contained in the DIMMER or ZONE Device categories

[DEVICE]<?> (e.g. <DIMMER> or <ZONE>)

[NUMERIC]<1-9> (sub-device)

The encoder display will now show LEVEL and the Manual assignment display will show the Device name and Sub-Device number e.g. DIMMER 3

Channels for a Sub-Device are grouped into blocks of 16 and the first block is always assigned to the SELECT keys automatically. This will be indicated by [NUMERIC]<1> having its LED lit

[SELECT]<A-P> (channels)

The LED on the SELECT keys will light up for any selected channel. If there are more than 16 channels, use the NUMERIC keys to select the next block of channels i.e. 17-32:

[NUMERIC]<2> (2nd block of 16 channels)

The dimming levels can be adjusted with the ENCODER. The selected channels will override any activity from a running PRESET. The ENCODER box will show the percentage level of the highest selected channel and this can be used to query a channels exact level just by selecting it by itself.

NOTE: the relevant Enable must be on for this to work.

Normally the channel will revert to the preset level when taken out of manual control, but if you select a preset with an OFF trigger, or use the CLEAR function, then the adjusted level will remain in force as long as that sub-device remains selected for manual control.

You can select or clear all the channels in one operation using the GROUP facility:

<GROUP>

<SET> or <CLEAR>

To exit from Manual control, press the <ESCAPE> key.

NOTE: Remember to deselect all channels before exiting Manual control so that they may be returned to PRESET control.

Sub-Device Sub-Level

You may also adjust the OVERALL level of Dimming and some Robot sub-devices by pressing:

[MODIFY]<LEVEL> twice

The ENCODER box will then show 'SUB LEVEL' and the percentage; this can be set and will be stored along with the trigger in Banks and Sequences.

If the Current Device is SEQUENCE then the level will act as a master level for all the presets in that Sequence Preset, allowing overall control of a group of different sub-devices. Master Level affects all sub-devices (as opposed to only ones in the current Seq); i.e. it is a live grand master. It also operates in real-time on dimmers rather than only affecting the start level of newly selected presets. *Note:* if a sub-device is defined as **Out of Blackout** in the Device configuration, the Master Level control (Grand Master) does not affect it. This is useful when a dimming type sub-device is used for something like motors or house lights which should not be affected by this facility. The device's own sub-level control is unaffected and may be set and stored in a Bank as normal.

Master Status

When <SEQ>, <1> is pressed to set it as the Current Device the status is shown in the same format as the ENABLE keys to help correlate which devices are which. In [Dual Screen mode](#) it shows them in the form:

```
Sub-Device Name - Red
Preset Name Trg - White
```

These are both highlighted when the enable is ON making it clear which are active, while letting you know what presets are waiting when the enable is off.

The next (Blue) section shows the HIDDEN sub-devices, which do not have enables, so only the preset name is shown. The bottom (Green) section shows the ROBOT overlays. In single screen mode a compressed version without the sub-device name is shown in a window, but the layout is in the same order and still correlates to the ENABLE keys.

Setting Tap/BPM counter (see [Preview: Sync Trigger](#))

You can set this manually using

```
[TRIGGER]<MENU>
<TAP> key twice to define the musical Bar length
```

Hitting <TAP> directly after that will re-sync the Bar to compensate for drifting. The display (on the bottom right) shows the BPM while the rotating bar shows the beats.

Audio->Sync Mode

This mode causes the Sync trigger to use Audio instead of the Tap/BPM counter to avoid having to manually set it. It is selected (using [TRIGGER]<AUDIO>, <SYNC>) to allow it to use the Multiplier control with a bass trigger signal (the Offset can only work with Tap or external triggering). Again, this allows triggering up to every 8th bass trigger to suit slower effects. The fractional speed will still work (they run at the Tap BPM rate), so something set to 1/4 will do a 4 step burst (at 4 times the BPM) every bass beat. It is reset to the default Tap trigger by pressing [TRIGGER]<AUDIO>, <ESCAPE>.

Sequence Counter

This display (between the Current Device and Tap/BPM displays) shows the current time-code of a preset selected in Loop Preset mode (as opposed to Real-Time mode (see [Master Sequences](#))). It is mainly there as a reminder that a Sequence is currently running to avoid confusion about why other presets are being selected! Real-Time Sequences are shown on a similar counter at the top right of the screen that appears only when they are active (see [Master Sequences – Record/Replay](#)).

Robot Basic Manual Control

Selection, Joystick, Shutter, Level and Iris

ROBOT sub-devices can also be controlled manually in real time. The beams can be positioned using the JOYSTICK and the Colour, Gobo, Iris Zoom and Shutter can be altered. If a PRESET is running when you enter manual control, the ROBOT units you select when you toggle the select keys ON will be removed from PRESET control of a feature the first time you modify the feature. They will be returned to PRESET control when you toggle the select key OFF again. To enter Manual control (after setting the required [Current Device](#)):

```
[JOYSTICK]<ROBOT>
```

The JOYSTICK will be enabled and the Manual assignment display will indicate the Device and Sub-Device number e.g. ROBOT 1

The lighting units can be selected individually using the SELECT key (or all together using <GROUP>, <SET/CLEAR>):

[SELECT]<A-P> (fixtures, repeat as required)

To toggle the Shutter open and closed press

[ENCODER]<ROBOT SHUT>

The encoder display will indicate ROB SHUTTER. With certain type of ROBOT light units you can use the ENCODER to set a lamp strobe effect and vary the strobe speed when the Shutter function is selected. It may also control the level when the fixture has a combined level/shutter, but this will not be affected by the device Sub-level.

If the light beam does not appear after you attempt to open the Shutter, it may be that the LEVEL is at minimum or the IRIS is set to its narrow position. To adjust these press:

[ENCODER]<ROBOT LEVEL> or [ENCODER]<ROBOT IRIS>

The encoder display will indicate these and allow adjustment. If the fixture has a true separate level control this will be controlled by the device Sub-level.

The JOYSTICK is used to control the beam position and the response to the Joystick movement can have various settings.

[JOYSTICK]<VEL SIZE>

The Joystick display will display the current velocity setting – FAST/MEDIUM/SLOW – which determines how fast the mirrors will move in response to or proportional to the Joystick operation. You can use <CLEAR>, [JOYSTICK]<MENU> to centre the fixtures.

<VEL SIZE> twice in quick succession

This will toggle the velocity to the next setting.

You can move the mirrors with the Joystick and then have them return to their starting position when you release the Joystick by using the Joystick POSN function

[JOYSTICK]<POSN>

The Joystick display will now show the current POSN setting – NARROW, MEDIUM, WIDE – which determines the range of mirror movement in response to the Joystick

<POSN> twice in quick succession

This will toggle the sweep size to the next setting.

When you are moving the mirrors with the <POSN> key selected, the mirrors will return to the starting position each time the Joystick is released. You can set a new start position by pressing the <POSN> key while holding the Joystick at the desired position, then release the Joystick.

To exit from Manual control, press the <ESCAPE> key. Also see section on using [Robot Features](#).

NOTE: Remember to toggle the [SELECT] keys OFF for any units that were in Manual control to return them to PRESET control before exiting.

Robot Features – Effects Generator

Colours and Gobos

The Robot Colours and Gobos can be changed to a setting of your choice or cycled to the next in sequence.

[MODIFY]ROBOT<COLOUR> or <GOBO>

A window is displayed listing the available colours or gobos, to see other pages press:

<= or =>

To CYCLE to next in sequence (this does not work with some models, see below):

<COLOUR> or <GOBO> again

OR – to set direct to choice

[NUMERIC] (0-63) then <ENTER>

If the Gobo Cycle does not work, then the Gobo menu is configured in Copy mode as opposed to Lookup mode:

- Lookup – this is always used for Colours and sometimes for Gobo. It means the menu number is used to lookup the settings from the menu so any changes made to the menu affect ALL fixtures and presets that use that number and you cannot change the setting within the preset – you must edit the menu.
- Copy – this is usual for Gobos as, especially with rotating types, it is useful to be able to make individual adjustments to each channel. It means the setting is copied from the menu into the preset, so any subsequent changes to the menu do NOT affect the preset. Furthermore, it means you can use the <ROBOT MENU> keys <1-4> to adjust the setting – the menu setting is intended as a starting point to save time.

Other Features

Some fixtures have a Focus or Zoom control, which is adjusted with the ENCODER after pressing:

[MODIFY]<ZOOM/FOCUS>

Some types of Intelligent light are fitted with a other features, also controlled by the ENCODER:

[MODIFY]<ROBOT MENU>
[NUMERIC]<1-9> (repeat to adjust each one)
<ROBOT MENU> to close

If a fader panel is fitted then it is automatically enabled to control the parameters (indicated on the Hint bar at the bottom of the screen). The adjustment is relative so it will start controlling it from wherever the fader happens to be and the position will not reflect the actual current setting. This means that it may not be able to control it over the full range, so in this case you just wipe the fader from top to bottom and it will lock into the correct value.

Effects Generator (FxGen) and Position Mode

The first menu of options is fixture dependent, but can include:

- Normal – default movement (also stops Effects Generator)

- Orthogonal – movement limited to X and Y axis, which helps positioning moving head type fixtures
- Slow/Medium/Fast – internal fixture speed, which allows different effects
- Blackout Move – the shutter closes until it arrives
- Tilt/Pan Fine – allows the ENCODER to adjust these for precise positioning

To select from these press:

```
[JOYSTICK]<MENU>
[ NUMERIC]<1-9> (position mode)
```

The alternative is the Effects Generator – these menus are exclusive, that is, a selection from the Position menu (such as 'Base Spin' for a Coemar NAT fixture) will stop any effect on the selected fixture and vice-versa. On the Edit screen, the relevant parameter (see above) will be prefixed 'E' when an Effect is selected, e.g. E04 – values without this prefix refer to the original speed parameter of 0–99%. There are 127 possible menu options (these may be edited with separate *Effects Editor* program) and values above 99 are shown with symbols to indicate a base value of 100 (:), 110 (;) or 120 (>).

```
[JOYSTICK]<MENU> twice
[ NUMERIC] (1-127 for effect number) followed by <ENTER>
```

The Speed parameter is then adjustable by the ENCODER and the display is relative to the fastest speed defined in the *Effects Editor*. The typical range is 0% (static), then 6% (0.06 cycles per sec = 16 secs per cycle) to 100% (1 cycle per sec).

For sequenced fixture effects (such as a Mexican Wave) you can set the ENCODER to control the Offset (or phase) between each of the fixtures. This can be used with any other shapes as well, causing them to start at staggered positions for a variety of effects. The value displayed is the negative offset between each fixture in degrees. This means that if you have 4 fixtures and the value is 45°, they will be equally spaced over 180°.

```
[JOYSTICK]<MENU> twice followed by <ESCAPE>
```

Note: the angle is the gap between each successive fixture, i.e. if 4 fixtures are set to 90° they will be equally spaced along the full length of the preset. The first fixture *also* moves from its initial position and this means that multiples of 90° will move it to a new start position but all other fixtures will be in the same position. In other words 0–90° is the normal useful range of the setting, 91–360° repeats this except for the position of the first fixture. This is intended for creating special effects where the starting position is important.

Static effects (e.g. 'Random'), which have 0 speed are used in conjunction with this so each fixture uses a separate step within the 'pattern', in other words it is using the pattern as a set of static steps rather than a sequence to be run through. This allows quick creation of a random 'scatter' effect with fixtures pointing in different directions. The Speed control does not affect these as they are preset with speed=0 in the *Effect Editor* to avoid it being output as a normal pattern.

If you want to delay the start of the effect on sequential channels, select them in sequential steps within a preset. This does not affect the Offset, so the delayed fixtures will start where they would be if they had started at the same time as the first one (see [Robot Presets: Step and Repeat](#)).

Programming

Presets are created with the EDIT function. When creating Presets you are actually saving the lighting scenes as one or more Steps of a program, and providing times for the duration of each step and the crossfade from one step to the next. Once created, the sequence of steps can be run with the press of a single key. It allows 255 presets for Robots, 128 for Sequences and 64 for Dimming and 32 for Switched type sub-devices.

Reserved presets

Presets 0–2 are always reserved for Set, Clear and S-to-L and 3/4 may be used for Touch. Only the installer is allowed to alter these (see [Advanced](#) section).

The PRESET Trigger

The only type of trigger relevant when creating a Preset is a time trigger which uses the STEP and X-FADE times to control the step changes. It is referred to as the PRESET trigger and like any other trigger, it can be applied when the Preset is stored in a device Bank.

You should understand the difference between the PRESET and the CLOCK triggers. Although they both make use of the STEP and X-FADE settings, the CLOCK trigger applies the same STEP and X-FADE times, as set during Preview, to all steps of the program. The PRESET trigger uses the STEP and X-FADE times as set when the PRESET is programmed, and they can of course have different values for every step in the program if you want.

EDIT Function

<EDIT>

Two windows are displayed on the screen, one showing a list of the first 16 Presets for the sub-device, the other providing a window for entering a Preset number, if it is the wrong sub-device, you may now select this:

```
[DEVICE]<?> (e.g. <DIMMER>)
[NUMERIC]<1-9> (sub-device)
```

You may well have noticed the similarity between this and the PREVIEW function and as with [Preview](#), you can page through the list of presets using the forward and backward arrow keys.

If you wish to Edit an existing preset, key the number of the preset followed by <ENTER>, otherwise just press <ENTER> on its own to create a new Preset. You are immediately placed in STEP 1 of the program as indicated at the top-right of the display screen.

```
[NUMERIC] (0-254, or leave empty for new) then <ENTER>
```

When editing Presets with dimming or switching channels, the preview window also shows the current Step number together with the Step and Crossfade times and the channel display as used in the Preview function.

The prompt line on the display screen indicates that there are several operations that can be performed during EDIT:

- MANUAL – set the Step and Crossfade times; select, adjust and control the lighting units or channels to create the desired scene for the current step
- <INSERT> – add a new step to the program by copying the one you are currently on. All steps following the current step have their step number incremented by one
- <DELETE> – remove the current step from the program. All steps following the deleted step are shifted back one in step number
- => (forward arrow key) – lets you advance through the steps manually in ascending sequence
- <= (backward arrow key) – as above but in descending sequence
- <ENTER> – terminate the EDIT function

When you are creating a Preset from scratch, you can set the Step and Crossfade times at STEP 1 and have them automatically applied to each STEP you add. (See INSERT operation)

<STEP> or <X-FADE>

Adjust the times as required with the ENCODER. There are special considerations for ROBOT type sub-devices (see [Robot Presets – Cross-fade](#)).

Select the channels or units you wish to control using the [SELECT] keys or <GROUP>, <SET>; set levels for dimming channels, position beams and set Colour, Gobo, Iris and Shutter for intelligent lights.

Proceed by setting the requirements for STEP 1. When you have completed STEP 1, use either <INSERT> to go on to STEP 2 or <ENTER> if you are only creating a one step program:

<INSERT> (add a step)

You are now on STEP 2, which has become a complete copy of the previous step. Leave the STEP and X-FADE times as they are if you want them to be the same as STEP 1. Select the channels or units as before. NOTE: To remove dimming channels that were copied from the previous step, they must be selected and their levels set to zero with the ENCODER before being deselected.

Once you have created all the steps, you can use the forward/backward keys to go through the program manually and check each step. You can remove steps you do not require using the <DELETE> key and add more steps with the <INSERT> key. You can have up to 64 steps in the program. When you are satisfied with the program, press the <ENTER> key to end the EDIT function. NOTE: You can abandon the EDIT function at any time by pressing the <ESCAPE> key:

<ENTER> (to complete editing)

A window is displayed for you to key in a 16 character name for the preset. Note: If you make the first character a space, it will use the Tag name defined in the configuration. This is usually a short mnemonic such as 'IB' for Intellabeams. If it has not been defined it will show the Device type and number, e.g. 'D1'. If you do not use this prefix make sure you use a consistent naming method so it is clear what the preset is for. Use the Column keys, which are also labelled as alphabetic keys (or the QWERTY keys, if fitted) and the [NUMERIC] keys to provide a name. If you make a mistake while keying, use the <DELETE> key to remove one character at a time and make the necessary corrections (see [Intro:Dialog Windows](#)).

<A-Z> or [NUMERIC]<0-9> (16 chars for preset name) followed by <ENTER>

You are now asked to enter a number for the Preset (0–31, 63, 127 or 254, depending on the device type). The current list of Presets is shown again for reference and you can page through the list using the forward arrow key:

[NUMERIC] (0–254) followed by <ENTER>

The Preset will now be saved, replacing any existing Preset with that number. It is also automatically selected with the PRESET trigger and you can adjust the TRIGGER, STEP and XFADE (see [Preview](#)) and store it in a BANK (see [Banks](#)).

SWITCHED specific facilities

The [SELECT] keys simply toggle the channel ON/OFF, while the <X-FADE> is not applicable.

DIMMING specific facilities

This applies to any device defined as having dimming type CONTROL as opposed to switched, it may be categorised as DIMMER, ZONE or NEON etc.

SET mode

In order to make it faster to program simple chases it is possible to make Dimming control behave as if it were switched. This means that the [SELECT] keys actually toggle the LEVEL from OFF to ON, as opposed to selecting it for control by the encoder. To do this press <SET> – pressing <LEVEL> will restore normal encoder control.

Recovering a Step (or Scene)

If you make a mistake adjusting levels in a step, press <GROUP>, <CLEAR>. This will restore the levels to how they were when that step was selected (as well as removing all channels from Manual control).

Robot Presets – Overlays – Colour/Gobo menus

Overlays – an overview

PRESETS for a ROBOT Sub-device are, by default exclusive which means that when one is selected by pressing a Column key, the PRESET will run and replace or exclude any ROBOT PRESET for the same sub-device that is currently running. This is the normal mode of operation for PRESETS for all Devices.

However, if the preset is edited as explained below and the trigger set to ADD, then different presets can control different functions and/or different intelligent light units. This means for example that you can run a PRESET controlling the mirror movement and then overlay a Colour change PRESET on top of it. These operate on a Last Takes Precedence (LTP) basis, so any parameters from an earlier preset are overridden by the later ones.

In order to help manage these overlays, each COLUMN is exclusive (use TRIGGER<MENU>, <CLEAR> to disable this). It is intended that you use a COLUMN for each group of parameters, e.g. A for movement and B for colours. In this way, when you chose different colours, the old overlay will be automatically replaced. This makes it clear which ones are active and stops the number of overlays increasing too far. Up to 8 overlay PRESETS can be added on top of each other for each sub-device. These can be seen at the bottom of the Robot or Master Status screens. In the unlikely event that this limit is exceeded, the last one will be over-written causing it to 'freeze' at its last position.

When selected with TOUCH, ROBOT PRESETS always overlay, irrespective of the trigger mode.

How COLUMN and TOUCH presets interact appears complex but if you imagine it as a canvas that each each preset paints on and understand that presets only record *changes*, it actions become clearer. What happens when the Touch key is released depends on what type of COLUMN preset was selected:

- None – the touch selection will effectively latch on because there is nothing for it to 'return' to.
- Exclusive – it will re-impose itself as it runs through, which may mean that not all parameters return *immediately*. If an immediate return is wanted (like a shutter flash), then the COLUMN preset must have a single step and a fast speed so that it can re-impose itself quickly.
- Overlay – it will re-impose itself as above but any parameters from the Touch preset that are not defined in the COLUMN will latch.

Normal Presets

The default mode is to store all Robot parameters (colour/gobo etc.) in all channels. This ensures that 'What you see is what you get', avoiding the confusion caused by accidentally creating a preset which only changes the mirror position, as when this preset is selected, you will get whatever colour happens to be set which may be different to the colour used during edit.

ROBOT Overlay Presets

To intentionally create an overlay, you must REMOVE THE FIRST STEP because by default all parameters are stored in STEP 1 of the PRESET. While in EDIT and on STEP 1 of the PRESET, do the following before programming any of the Steps:

<INSERT>

You will now be on STEP 2, so rewind back to step 1 and delete it:

<= (back to step 1)

<DELETE>

Although the screen will show that you are still on STEP 1, the original STEP 1 will have been removed. You can carry on with EDIT as normal. Remember if you do not want mirror movement in the overlay, do not touch the Joystick. The same applies to the other ROBOT functions.

Robot status screen

Parameters are shown as dots (.) when they are completely unaffected by the current preset; as a highlighted number when it is changed and as a normal number when it is defined but unchanged. In this way it is clear what the overlay will do as advancing through the preset will correctly show what parameters will be defined. Only the Channel number is highlighted when the channel is selected for manual control, the parameter is only highlighted once it is adjusted.

Once you have completed editing (as with normal presets), you may alter the TRIGGER (see [Preview](#)), and adjust the speed and store in a BANK as normal (see [Banks](#)). The entry will have a '+' next the Trigger mode mnemonic e.g. 'PL+' means 'Preset Loop with Add'.

Cross-fade times for ROBOTS

When controlling ROBOT sub-devices the cross-fade time refers to the mirror 'sweep' time i.e. the time taken for the mirror that directs the beam to move from its position in one Step to its new position in the next Step.

If the X-FADE time is set longer than the STEP time, the mirror will never reach the intended position because the Preset will have advanced to the next step before the cross-fade time has elapsed. You should therefore take care when setting the times with these sub-devices. It is also good practice not to set the times too low because not only will you be losing the real effect of the lights, you may also be placing unnecessary stress on the motors that control the mirrors.

If you wish to set a separate x-fade time for a parameter (e.g. a slow Colour change), the colour preset *must* be defined as an OVERLAY and there must be at least one other preset running (e.g. an EXCLUSIVE or a prior overlay for mirror), otherwise all parameters are set to FAST except the mirror speed.

ROBOT Programmable Menus

The 64 Colour and Gobo menu entries may have the name and, depending on the robot type, settings edited. Ensure some fixtures are selected if you want to see the fixtures changing, though the encoder displays the percent and decimal (0–255) value to allow blind editing from the manufacturers data.

To do this press (in manual or edit mode)

```
<COLOUR> or <GOBO>, <EDIT>
[NUMERIC] (0-63) then <ENTER>
```

It then shows a menu of adjustable features that are selected:

```
[NUMERIC]<1-4> (choose feature, repeat as required)
```

These are highlighted if valid and adjusted with the ENCODER. If a fader panel is fitted then it is automatically enabled to control the parameters with faders 1–4. Setting the value to 255 is interpreted as IGNORE – e.g. if there are 3 gobo parameters in the menu, you can set any of them to IGNORE and when selected, these parameters will be left alone. This is useful if, for example, you want a general purpose Frost menu entry that does not alter the existing gobos.

When complete, do as with preset editing:

```
<ENTER> to complete
<A-Z> or [NUMERIC]<0-9> (16 chars or leave empty to keep) then <ENTER>
[numeric] (0-63 for menu position), <ENTER>
```

NOTE: If you make an adjustment and then press <ESCAPE>, it will remain adjusted until you re-boot. This can be useful for temporary alterations. However remember that if you are in edit mode you are not allowed to escape, you must complete the key sequence.

Copying Presets

During edit you may press <PREVIEW> and select a robot preset and this will be available to copy into the edited presets. Pressing [TRIGGER]<TAP> will advance through the preset to allow you to get to the required step. Once you reach it, pressing <COPY> will copy all the parameters that are defined in the source unless you have manually set them. Remember to select the required DESK before you start EDIT as you cannot change it.

Step and Repeat

This allows the fast creation of the chase and wipe effects by repeating the settings of Channel 1 through the following channels with each subsequent step.

To do this, set up the first channel the way you want and then press the [NUMERIC]<STEP> key. If there is only 1 step in the preset, it will insert the same number of steps as there are channels – otherwise it will step and repeat for however many steps are already there. If, for example, you just opened the shutter and pressed <STEP>, this would 'wipe' through the channels opening each one in turn. To make this a chase, you go back to step 2, turn off the shutter on Channel 1 and press <STEP> again. This copies the closed shutter through the steps one channel behind the open shutter, so you end up with a shutter chase.

Note that this only works for Shutter On/Off (*not* values set by the encoder), Gobo, Colour and EG (Effect Generator) parameters. You also have to actually set the value so it knows to use it – i.e. even if the colour is already Red, you must re-select Red from the numeric entry (the colour cycle command will be ignored).

Adjusting the Step time to match the EG speed allows a sequence of circles to be created. Note that the EG speed and offset is fixed within each step – the CLOCK trigger will not allow it to be overridden.

Master Sequences

When you create a Master Sequence, you are selecting Presets to run or turning Enable keys ON and OFF at different Steps and time intervals. There are two forms of Master Sequence, one that is created as a series of steps using the normal EDIT function, the other is created as a 'real time' recording of events using the RECORD function.

Master Sequence Editing

With EDIT you have a TIME CODE that begins at zero and advances as you add Steps. You can advance the time manually at each Step by using the ENCODER with X-FADE selected. You can also set a value to be added to the TIME CODE each time you press <INSERT>: this is set as per the normal STEP time. The current TIME CODE is shown in the encoder display.

It is important to understand that although the Enables will be off, this does not mean they will turn everything off when the preset is selected. It only affects Enables that are actually operated so if you DO want an Enable off, you must press in on then off again. This is then shown on the preview screen. You may now press the Column/Touch Preset keys you wish to run or the Enable keys you wish to turn ON or OFF.

As with normal EDIT, when you press <INSERT> the current Step is copied to the new Step therefore you will have to switch OFF any active Enables that you do not want in the new Step or select a Clear PRESET. If you make a mistake, selecting a Preset or Enable for a Device that you want left alone, then you must delete the step and select the other Presets and Enables.

Proceed with the EDIT function as described in the previous section. Press <PREVIEW> to toggle between the edit screen and the desk display. Only defined actions are shown to make it clearer what the Sequence will actually affect. In other words when you start editing a new preset it will be blank and then show Enables/Presets that you actually press.

Also note that when pressing <ADVANCE> through an existing preset will show the accumulative effect, that is if the first step turns on Enable 1 it will STAY on until altered, even though it is not actually part of subsequent steps. This is generally preferable as it gives a better idea of what the preset will do, reminding you which devices are still on/off or not affected throughout the sequence. During <REWIND> it shows the ACTUAL events in each step, so the example Enable 1 above would disappear in steps 2 onwards as it was actually activated in step 1. This can be used to confirm what is actually happening. For example the same preset being pressed repeatedly to get a 're-start' effect would not show as any different to it being selected once, when going forwards, but in rewind, it will show in multiple steps.

The Touch panel is set to Latch mode to allow it to be used to select the other 32 presets in the desk on a Micro.

During EDIT, pressing any key with an overlay of the same preset number as one shown in that step will turn it off.

Interaction with SEQs during replay

The SEQ preset itself will be highlighted when selected, but the presets it selects are NOT highlighted. They have no relation to the desk, indeed the desk that was used to create the sequence may have been completely changed: the SEQ stored the actual presets at the time it was created. If any of the SEQ presets are exclusive, then it will clear the highlight of any manually selected presets. This ensures that the desk correctly shows that those manually selected presets are no longer running. This will happen even if the sequence happens to select the SAME preset number: the point is that the SEQ selected it, not the original manual key. To avoid confusion you should not run Sequences that contain the same sub-device as ones you are manually selecting, as they will cancel each other, possibly giving unexpected results. If you want to take over, then turn off the SEQ enable to stop it (see [Advanced Tips](#) for more details).

Master Sequence – Record/Replay – Memory

Master Sequence Recording

With RECORD you have a time signal to which COLUMN or ENABLE key presses are recorded. The time signal can be from the internal clock or from an SMPTE source connected to the MIDI Input.

NOTE: To use SMPTE (a code that allows synchronising to tape) your system must have an external SMPTE to MIDI converter.

You can 'overdub' an existing sequence Preset by using it as a source and giving it the same or a different number when you end the recording.

Once started, any actions you perform (i.e. pressing a Column Preset key or an Enable key) are time stamped with the current elapsed time value, so that when you run the Master Sequence, the events or actions occur at the same time as when you were recording them. As you would expect, this is most useful for running a light show in time to a piece of music, from a single Preset key. To start the Record function:

<RECORD>

A window is displayed listing the current Master Sequence Presets and you are asked to enter a number and press ENTER. You can page through the list as with EDIT and you can select an existing Preset for 'overdubbing' or press <ENTER> to record a new Master Sequence.

[NUMERIC] (0-127, or leave empty for new) then <ENTER>

You are then asked to indicate whether you are using an SMPTE signal or the internal clock.

<SYNC> or <CLOCK>

If you press <SYNC> then >ENIGMA< will wait for the SMPTE code to start. This is indicated by the word WAIT being displayed at the top-right of the screen. When the SMPTE code is received, or if you press <CLOCK> to use >ENIGMA<'s internal clock, the clock will immediately start to run. The record time will now be shown in the top-right of the display screen and you can begin activating Presets and turning the Enables ON/OFF as required. You are may change the DESK during Record to allow access to more Presets using <DESK>, [NUMERIC]<0-9> as normal.

NOTE: The displayed time-code will be offset from the time displayed on the SMPTE generator. This is normal and does not indicate a problem.

When you have finished recording the Master Sequence, press the <ENTER> key to end the RECORD function. You must provide a name and a number for the Preset as you do with the EDIT function. The Master Sequence Preset is now saved in the controller and you can proceed to store it in a Bank or check it out using Preview.

>ENIGMA<

V9.80 User Guide

26

Recorded sequences are exactly the same as those created using EDIT. After you have recorded a Master Sequence, you can make any adjustments or alterations to it using the EDIT function. For example you may want to trim time-codes, delete mistakes or add missed events.

Master Sequence Replay

The Real Time Sequencer replay facility has two uses. It is used to run a sequence in response to a SMPTE time signal. It is also useful because this sequence is separate from the normal Master Sequence Presets. You can therefore run a Master Sequence Preset even while the Real Time sequence is playing. The Real Time Sequence only runs through once and is not affected by the Master Sequence [ENABLE] key.

To start the Real Time Sequence replay, use the PREVIEW facility:

```
<PREVIEW>, <SEQ>, [NUMERIC]<1>
```

A window is displayed listing the Sequence Presets. Choose the one that you wish to replay:

```
[NUMERIC] (0-127) then <ENTER>
[TRIGGER]<MENU> (to select real-time mode as opposed to Preset mode)
<SYNC> or <CLOCK> (for SMPTE or Internal)
```

If you are using SMPTE for the replay, >ENIGMA< will wait for the time code, otherwise the replay will begin as shown by the top-right of the screen. You may also store this in a BANK, allowing direct selection from the Column keys (see [Advanced Tips](#) for details of how Real-Time and Preset Sequences interact).

It will run through and stop automatically if the full time elapses, but with SMPTE, if you stop the signal before the end, it will 'rewind' to the start. This is useful for timed repeated shows as you can rewind the tape (or MIDI Sequencer) to the start after the music and >ENIGMA< will be ready and waiting to play it again. To stop the replay before the end, or to stop >ENIGMA< waiting, use the CLEAR function:

```
<CLEAR>, [DEVICE]<SEQ>, [NUMERIC]<1>
```

Memory Limitations

Please note that you cannot expect to have 128 Robot and Sequence presets all with 64 steps! These are intended mainly to allow more flexibility with Robot overlays so you can afford to have a preset simply for static Red or a shutter chase and then combine these into composite presets in the Sequence device.

As a guide, a fully defined Robot preset step (all parameters shown as a number instead of a dot) needs 0.5K (1K is about 1000 bytes) with 32 fixtures. However, subsequent steps need much less as it is changes that are stored, so a second step (or an overlay) that changes all 32 fixtures to Green needs under 0.1K. A typical system has over 500K free (for all devices) so it is easy to see that it would only take 20, 50 step presets, with every parameter changing in every step, to use all the memory. Conversely, on a typical 16 fixture system, 128 overlay presets, each with 16 steps would only take 100K: so with care it is possible to have a very wide range of effects. You can check available memory by pressing <SYSTEM>, <SYSTEM>.

In the case of Sequences, each action such as a preset or an enable press uses 8 bytes, so the (extreme) limit here is 30 presets of 64 steps with 32 presets in each step. More sensibly, 100K bytes allows 128 presets with 24 steps, each with 4 Presets or Enable presses. There is also a limit of 4000 Presets or Enables in any one Sequence preset. This limit can be very easily reached if you select a looped sequence while in Record mode, as it records every event, so avoid this.

Take particular care with momentary (Restore) Touch presets as they effectively create two events, one when selected and another when released as well as being capable of fast, repeated selection. As such you can very quickly use up memory. The Touch panel may be switched to Toggle (using DESK, CLEAR) so they act as latching presets like Columns.

Backup – Changing Access – Utility Disc

Any changes that are made to PRESETS, BANKs and DESK configurations are automatically saved on the PRIMARY disc (or with <SYSTEM>, <STORE>), so that the changes are not lost if and when the system is powered OFF/ON. In the unlikely event of a failure with the PRIMARY disc, the system would have to be booted up using a RESERVE disc inserted into the external drive. Because these alternative discs are not used during normal operation, the changes to PRESETS, BANKs and Desks are not saved to them.

>ENIGMA< provides a BACKUP facility that lets you copy all the PRESETS, BANKs and DESK information to alternative discs so that if you have to resort to using them, all the definitions that you have programmed will be available as they were when the last Backup was carried out. You should therefore perform the Backup procedure regularly to keep the RESERVE discs as up to date as possible, especially if you have been doing a lot of programming. You should also try and boot up from the alternative discs from time to time in order to check that they are still useable.

Note that this will only work with a disc that already has the correct software with the same configuration on: NOT just any floppy disc or even an older version >ENIGMA< disc. If you want a complete backup use the Utility Backup or Duplicate functions as these erase the old disc and make a complete copy – see section below.

Backing up onto the Reserve Boot disc

<SYSTEM>, <ENTER>

You are prompted to key in an Access Code. You must key the 4 digit PROGRAMMER code to perform a backup to the Reserve Boot disc.

[NUMERIC] (4 digits)

You are now prompted to press <STORE> to start the backup or <ESCAPE> to abandon the process. Before pressing <STORE> you must remove the normal Boot disc from the external drive and insert the floppy disc marked RESERVE BOOT.

<STORE>

The backup begins and the keyboard is locked-out until the backup completes. This will normally take a few minutes. When it is complete, you should remove the Reserve Boot disc and re-insert the Boot disc before continuing with normal operation. You may wish to boot up the system from the Reserve Boot disc or the Internal disc drive to test them before returning to normal operation.

NOTE: Remember to boot up from the normal Primary or Hard disc once you have finished checking the alternative discs.

Backing up onto the Internal drive

Do the same as for the RESERVE disc, but when you are prompted to key in an Access Code. You must key the 4 digit INSTALLER code to perform a backup to the Internal disc drive. Care should be taken with this as it means work done on the Hard Disc will be overwritten. This is mainly to allow the Installer to restore the hard disc from a backup copy.

Changing Access mode without re-booting

As you may have noticed, you have the option to press the <ESCAPE> key after you have keyed in the Access Code during the Backup procedure. This facility allows you to change the Access mode e.g. from INSTALLER to USER without the need to power the system off and back on again.

Restarting without switching off

Proceed as with doing a backup but use a special access code '9999' and then press the bottom left Column key. This is

normally used to switch to the UTILITY disc or to test a RESERVE boot disc.

Utility Disc

Backup/Duplicate

Unlike the internal >ENIGMA< Backup facility (which only saves your presets), this creates a complete backup, reformatting the floppy so you can use it with any 1.44M floppy disc. To do this, insert the UTILITY disc and reboot. When prompted, insert your PRIMARY or RESERVE disc and then your usual access code. You then select the option required. You will not be allowed to Install or Configure unless you have the Installer access code but you can use **Backup**, **Update** and **Duplicate**. Take care not to overwrite discs you want to keep – set the write protect tab to avoid this. Backup copies from the internal (Hard) disc to a floppy, while Duplicate can make multiple copies of your floppy (this will also work with the UTILITY disc). It does this in a way that 'tidies up' the disc and the boot files, so in some cases it can fix a corrupted disc.

Update

To Update your version, you do as above and after selecting **Update** and allowing it to load up your OLD disc, you insert the NEW disc (when prompted) and it will transfer the configuration and usually your presets will remain compatible. If not, you will be warned and you may need to keep using your old version for active use while you program new presets for the new version. In any case you should ALWAYS keep the old version as a backup in case the new version turns out to have a problem.

Advanced Use – Auto – Special Presets – MIDI/Analog Input

AUTO function

This operates by pressing COLUMN keys in time to the music. HOWEVER, to be of any use a DESK must be created with a sensible range of presets for it to choose from. It is limited to 1 second minimum but it is not wise to include anything too dramatic or things like Rig-movement or Smoke machines. A mix of presets in each sub-device and perhaps a few single step Master Sequences with Enables is enough to give variety. It is selected with

[TRIGGER] <AUTO>

This forces Enigma to Desk 1 if it is currently on 0 or 9: this is to allow these desks to be reserved for purely manual use with no risk of AUTO selecting presets from them. Any sub-devices defined as Out of Seq in the configuration will be ignored by AUTO: this is useful for things like Rig movement that should never be run automatically, even if an inexperienced lighting operator puts them in Desks other than 0 or 9. AUTO mode starts by selecting the preset in Col.A-1, then it selects a preset from Col.A-D (excluding A-1) every bar. Also note that:

- When selected, it stops all Sequences, including Realtime types.
- If Auto selects a Realtime Sequence, this blocks all other presets (except manual selections) to allow it to run to completion without being interrupted by other presets. Upon completion an Auto preset is immediately selected (on the beat) to avoid any long gaps.
- Presets and enables can be manually selected without stopping Auto mode – any other keypress will abort the mode.

Special Modes

Using the Utility Disc, the Installer can define Latch or Toggle operation for Column keys; external Touch/MIDI inputs; Auto user mode (no access code needed) and/or auto preset A1 start and/or AUTO mode. Ask your Installer for details.

Special Presets (Clear/Set/S->L/Touch)

These presets are normally automatically generated during configuration, but may be altered by the installer. They should NOT be programmed as general-purpose chases, though they may be stored as normal in Banks if required.

- Preset 0 (Clear) – normally all channels in sub-device OFF, but may be altered to leave some channels at a low level. Only the first step is used and is selected by the CLEAR command. NB This also applies to Master Sequences, being selected in Touch Column mode and if you escape from Sequence edit, so leave it unless you specifically want something turned off in these situations.
- Preset 1 (Static) – normally all channels in sub-device ON, but may be altered to limit level to, say 75%. Only the first step is used and it is selected by the SET command.
- Preset 2 (S-to-L) – This makes special use of the sound to light facility provided on >ENIGMA<. It is like a normal program with eight steps, each step activating a different set of channels. However, when it is selected using the S/L key, it operates like an 8-channel sound to light unit. Step 1 is triggered by low frequencies, step 8 by high frequencies and steps 2–7 by intermediate frequency bands. Not used by SEQ. or ROBOT.
- Preset 3/4 (Touch) – Used by the touch panel at the bottom of the control panel. Once again it is an 8-step program but this mode allows the steps to be overlaid. The touch panel is divided into four separately assignable eight key sections named Upper left, Upper right, Lower left and Lower right. When a sub-device is assigned to one of these sections, the eight steps can be selected independently using the eight touch keys i.e. Pad 1 selects Step 1, Pad 2 selects Step 2 and so on. This is also used by MIDI and Analog In features to provide overlays. Not used by SEQ. or ROBOT.

MIDI/Touch/Analog Interface

The MIDI input allows you to run PRESETS and perform certain related functions such as DESK changes and TOUCH assignments from a MIDI keyboard or other MIDI device. Only MIDI CHANNEL 1 is listened to, the others are ignored. 32 of the 64 MIDI Notes are used in exactly the same way as the 32 way Touch Panel. In addition to this, the note velocity is interpreted and used as a level modification. The other 32 MIDI notes are directed to the COLUMNS, but the preset is always at 100%. There is a default mapping, defining which MIDI notes are used for each Column/Touch pad, but this may be altered by using the UTILITY disc (under Global/MIDI). MIDI Program Change codes are used to alter the Touch Panel assignments and to load new DESKS into the 8 Columns in both Touch RESTORE or LATCH modes. This allows you access to all 640 stored PRESETS from a MIDI keyboard

There are options for selecting Analog In (allowing 0–10V control from faders – only works on Micro 2 or with add-on adaptor); MIDI level control (allowing fader/programmed control over MIDI) or to switch it off (to allow use of the Touch panel without interruption). In all these cases the Touch option is that is being controlled allowing either presets in Columns to be accessed or sub-device overlays to be selected (see Special functions presets above).

Checking MIDI>Selecting input

<SYSTEM>

A window is displayed on the screen and the last MIDI note received by >ENIGMA< along with its velocity is shown at the bottom. This enables you to check that the MIDI communication is OK. Each time you send a note by pressing a key on your MIDI keyboard, it should appear here with its velocity. The maximum velocity is displayed as 127 and 0 is Note Off.

It also shows the current MIDI Note mapping table which contains the MIDI note numbers and the Columns/Touch sections that they are assigned to. At this point you can just press <ESCAPE> or use the NUMERIC keys to select other inputs such as using the Analog or MIDI fader inputs:

[NUMERIC] <1–4> (for MIDI/Analog inputs on menu) or <ESCAPE>

Before this will operate, you have to assign the Touch Panel. This can be done as normal from the >ENIGMA< keyboard or it can be done by using MIDI PROGRAM CHANGE codes as follows.

1–8 : Select Touch options 1–8 as would normally be done with the <TOUCH>, [NUMERIC] key sequence, however both sides are selected together. If a key is LATCHED, as is the case with the upper sections i.e. G and H, the MIDI note will toggle it ON/OFF. This should be avoided with units like the PAD-80 by setting it to act on the lower sections only i.e. E and F.

9 : This turns Touch OFF and is to allow operation of the MIDI device without affecting the >ENIGMA<.

10–29 : This selects Desks 0–19 using the mode selected below, which is the same as that set by <DESK>, <SET/CLEAR>.

30: Sets Touch Column RESTORE mode which means that when the MIDI GATE goes off, any previously running PRESET

will be restored. As such the GATE period must be set to give the required result. If it is too short the PRESET will not get started. One second is a reasonable value. In the case of a keyboard, it will be restored when the key is released. The velocity is converted to an overall level for that sub-device if it is of a dimming type.

31: Sets Touch Column LATCH mode which means that there will be no restoring when the GATE goes off. As such the GATE period is not important. This is useful for moving lights which are not fast enough and you just want them to move to a new single step position without returning.

Other >ENIGMA< operations may continue while the MIDI interface is being used but care must be taken because the MIDI DESK change facility is disabled during any manual access of the >ENIGMA< keyboard. Also MIDI will choose from the CURRENT Desk, so if this is changed on >ENIGMA<, you will not get the expected result. In general it should be one or the other.

Advanced Tips – Sequences – Effect Editor – Warning

Sequence types

There are 3 basic types of Sequence that need to be understood in order to avoid unexpected results due to the way they act.

- Static – a single-step Sequence. Once it has been selected, that's it – it simply sets the defined sub-devices as if you had pressed the presets yourself. This means that a momentary preset will restore the current sub-devices, but not the Sequence. This is a subtle but important difference – any sub-device presets selected since the Sequence will be correctly restored when a momentary (e.g. Touch) preset is released. Both Loop and Real-time Sequences just overwrite the results of a Static, there is nothing to 'stop'
- Loop – this has multiple steps but the main difference is that the Sequence details are retained so it can loop round and repeat itself and, more importantly, if a momentary preset is selected which is also a Sequence, the original multi-step Sequence is restored when the momentary one ends. Both Static and Real-time Sequences will stop these
- Real-time – this also has multiple steps but is handled totally independently so it can run in parallel with a Loop Sequence. It is normally used with time-code input to synchronise to an external CD or tape. The momentary presets totally ignore this type of Sequence but will take a 'snap-shot' of the settings when selected and restore that, losing any Real-time presets that occurred during the momentary selection. Neither Static nor Loop Sequences will stop this – it will stop when it is complete (it does not loop unless stopped half way through), though it can be aborted by pressing <CLEAR>, <SEQ>, <1>

Effect Editor

This is a separate Windows 95/98 program that allows the effects to be edited and saved to an >ENIGMA< Primary disc for use. A range of pre-programmed effects is supplied and these may be modified and added to as desired.

Please note: This program is supplied 'as is' and we offer no warranty on its operation and take no responsibility for any damage whatsoever caused to the computer it is installed on. We have taken all reasonable care but it is strongly recommended that you make a complete backup before installing the program.

There are some important points about the Editor:

- The range of speeds is very wide and 4 is the norm – very few fixtures will be capable of running at 15 so take care with these settings
- Setting a slower speed (1–2) will make the overall range lower, which may suit slow fixtures such as moving head types
- Static effects (e.g. 'Random'), which have 0 speed are used in conjunction with the EG Offset control so each fixture uses a separate step within the 'pattern', in other words it is using the pattern as a set of static steps rather than a sequence to be run through. This allows quick creation of a random 'scatter' effect with fixtures pointing in different directions. The Speed control does not affect these as they are preset with speed=0 in the *Effect Editor* to avoid it being output as a normal pattern. If a speed is set in the *Effect Editor*, it will cause the mirror to jump about at random with 0 sweep time which is of no practical use and should be avoided

Warning

ALS takes every care in the software and hardware design and provides facilities such as 'Installer Only' and 'Out of Sequence' and 'Lock' options to reduce the risk of inappropriate use. However, inherent in its responsive nature, >ENIGMA< is capable of sending updates 30 times a second which may be too fast for some fixtures. This includes such things as hoists, power/lamp switches and contactors where rapid command changes could cause actual physical damage, blown fuses or breakers.

As such please take care when programming fast chases – if in doubt ask the fixture manufacturer about any restrictions.

ALS specifically take no responsibility for any damage resulting from data that is output by >ENIGMA< in any form, whether as a result of normal operation, inappropriate programming or fault or other conditions. It is up to the installer and operator to ensure that no presets place stress on the fixtures and that hardware fail-safe mechanisms are in place to protect against erroneous outputs.